

GENERAL SPECIFICATION  
FOR  
Non Standard Ammunition (NSA)

1. SCOPE

1.1 Scope. This general specification describes the requirements and verification procedures for Non Standard Ammunition (NSA) (as defined in 6.3.1 of this specification) excluding Non Standard Small Caliber, Mortar and Shoulder Fired/Spin Stabilized Grenade ammunition; See family specifications for these items.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in section 5 of this specification. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in section 5 this specification, whether or not the specific requirements are listed.

2.2 Government documents. Not Applicable

2.3 Non-Government publications.

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air

International Maritime Organization (IMO) International Maritime Dangerous Goods Code (IMDG)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

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### 3. REQUIREMENTS

3.1 Technical requirements. Ammunition shall meet the requirements and verifications of this specification for the non standard ammunition listed in Annex A. The non standard ammunition shall be accompanied with technical data as defined in 6.3.2 of this specification.

3.2 Compliance to technical requirements and storage history. Ammunition shall have evidence of compliance to applicable technical data and documented storage history of ammunition.

3.2.1 Reduction or elimination of verification procedures. Sufficient evidence of compliance to technical requirements and acceptable storage history of ammunition as determined by SFAE-AMO-MAS-NSA may warrant reduction or elimination of verification procedures in Table I of this specification.

3.3 Conformance inspection. A sample of all non standard ammunition presented for acceptance shall be subjected to conformance inspection in accordance with Table II.

3.4 Serviceability. Ammunition shall be serviceable and issuable without qualification. Ammunition shall be of good condition, without visible signs of degradation of ammunition or deterioration of packaging.

3.4.1 Identification of defects. Defects inherent to the ammunition design and/or manufacturing processes shall be identified within the technical data and shall be classified as either a minor, major, or critical defect with a defined method for acceptance/rejection of ammunition.

### 3.5 Interface and interoperability.

3.5.1 Weapon interface. The ammunition configuration shall conform to weapon interface as identified in Annex A, Weapon Interface or as otherwise specified in contract or purchase order.

### 3.6 Operating requirements.

3.6.1 Performance capabilities. All technical data, as identified in 6.3.2 of this specification, shall provide operational and performance capabilities of the ammunition listed in Annex A of this specification. Performance capabilities may include, but are not limited to, the following: operating temperatures, range, pressure, velocity, shelf life etc.

3.6.2 Function, casualty and metal parts security. The ammunition shall function without casualty or damage to the weapon while maintaining metal parts security. Ammunition shall exhibit integrity during weapon usage and in ballistic flight.

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3.6.3 Fuze type and description. For fuzed non standard ammunition listed in Annex A of this specification, the technical data package shall include, at a minimum, a drawing/figure, a functional description and acceptance test methods for the fuze. The drawing/figure shall show the internal view of the fuze with component parts labeled. The functional description shall include physical characteristics, operation, storage and transportation conditions, etc. Acceptance test methods of the fuze shall include any in-process safety tests (i.e. jolt and jumble, sensitivity, armed/not armed and safe separation distances).

### 3.7. Environmental.

3.7.1 Sequential rough handling. Cartridges shall be capable of withstanding the rigors of the sequential rough handling and transportation throughout extreme temperature ranges and meet all performance and safety requirements.

### 3.8 Support and ownership.

3.8.1 Packaging. Packaging and packing shall be in accordance with section 5 of this specification or as otherwise specified in contract or purchase order.

3.8.2 Marking. Marking shall be in accordance with section 5 of this specification or as otherwise specified in contract or purchase order.

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### 4. VERIFICATION

TABLE I. Requirement/verification cross reference matrix

#### METHODS OF VERIFICATION

N/A - Not Applicable

1 - Analysis

2 - Demonstration

3 - Examination

4 – Test

#### CLASSES OF VERIFICATION

A – Basic Verification

B – Verification Procedures

Requirements	Section 3 Requirements	Section 4 Verifications	Verification methods					Verification class	
			N/A	1	2	3	4	A <sup>1</sup>	B <sup>2</sup>
Compliance to technical requirements and storage history	3.2	4.2		X				X	
Conformance inspection	3.3	4.1.2, Table II		X	X	X	X	X	X
Serviceability	3.4	4.3				X		X	
Identification of defects	3.4.1	4.3		X				X	
Weapon interface	3.5.1	4.4.1			X				X
Performance capabilities	3.6.1	4.5.1			X		X	X	
Function and casualty, metal parts security	3.6.2	4.5.2					X		X
Fuze type and description	3.6.3	4.5.3			X				X
Packaging	3.8.1	4.7.1				X			X
Marking	3.8.2	4.7.2				X			X

Notes

1/ Required for each lot or batch

2/ Required for each lot or batch; may be reduced or eliminated (see paragraph 3.2.1)

4.1 Technical verification. The ammunition may be subjected to verification of any or all requirements of applicable technical data in addition to verification in accordance with Table II of this specification by the Government or an identified Government representative. Noncompliance to any requirements shall be cause to withhold acceptance of the lot or batch in which the noncompliance was found.

4.1.1. Lot formation. The ammunition shall be assembled into identifiable lots, sublots, or batches, or in such other manner as may be prescribed. Each lot or batch shall, as far as practicable, consist of units of product of a single type, grade, class, size, and composition, manufactured under essentially the same conditions, and at essentially the same time. The lots or batches shall be identified by the contractor and shall be kept intact in adequate and suitable storage space. The formation of lots or batches is desirable for reasons of homogeneity.

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4.1.2 Conformance verification. The ammunition shall be subjected to verification in accordance with Table II of this specification.

4.1.3 Conformance acceptance. Acceptance of ammunition shall be based on compliance with verification in accordance with Table II of this specification. Failure to meet requirements of Table II shall be cause to withhold acceptance of lot or batch for which verification was performed.

TABLE II. Conformance verification

Requirement	Requirement Paragraph	Verification Method	Sample size
Compliance to technical requirements and storage history	3.2	4.2	1
Serviceability	3.4	4.3	See Note 1
Identification of defects	3.4.1	4.3	See Note 1
Weapon interface	3.5.1	4.4.1	Annex A
Performance capabilities	3.6.1	4.5.1	Annex A
Function, casualty, metal parts security	3.6.2	4.5.2	Annex A
Fuze type and description	3.6.3	4.5.3	Annex A
Packaging	3.8.1	4.7.1	2(See Note 2)
Marking	3.8.2	4.7.2	Annex A

Notes:

1. To be performed using a defined sampling procedure for inspection determined on the lot size
2. Two (2) units of packaging and pack will be inspected

4.2 Verification of evidence of compliance. Evidence shall include, but is not limited to, the following:

4.2.1 Identification of technical requirements to which ammunition is/was produced.

4.2.2 Producer, date of manufacture and original acceptance.

4.2.3 Initial acceptance reports, including type, lot or batch identification, quantity and method of acceptance (e.g. sample size, verification method, acceptance criteria, results).

4.2.4 Surveillance reports, including lot or batch identification, quantity and method of surveillance (e.g. sample size, verification method, criteria for action to be taken on lot or batch, results).

4.2.5 Storage history, including duration and storage condition (e.g. controlled, uncontrolled).

4.3 Serviceability. A random sample shall be selected from the lot of non standard ammunition using a defined sampling procedure for inspection. The non standard ammunition shall be visually inspected for signs of degradation and the identification of defects identified in

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the producer's technical data. Ammunition shall be of good condition, without visible signs of degradation of ammunition or deterioration of packaging.

### 4.4 Interface and interoperability verification.

4.4.1 Weapon interface. A random sample shall be selected from ammunition to be delivered and inserted into a weapon chamber or chamber gage that conforms to the identified weapon system to check for profile and alignment. Inability to interface properly with weapon system shall be considered a failure to show compliance and constitute a single reliability failure.

### 4.5 Operating verification.

4.5.1 Performance capabilities. All tests that are performed by the producer shall demonstrate the operational and performance capabilities as conducted in accordance with the producer's test procedures to verify that a the lot meets the specified performance requirements.

4.5.2 Function, casualty and metal parts security. A random sample shall be selected from ammunition to be delivered and functioned from the identified weapon system to check for function, casualty and metal parts security. Inability to function without casualty or damage to weapon while maintaining metal parts security shall be considered a failure and constitute a single reliability failure.

4.5.3 Fuze type and description. A sample of the fuzes, representative of the lot, shall be tested in accordance with the producer's procedure to verify lot function throughout the specified requirements.

### 4.6 Environmental.

4.6.1 Sequential rough handling. The sequential rough handling tests shall be performed in accordance with producer's test procedures to verify ammunition and packaging will maintain performance and safety when exposed to the rough handling and temperatures consistent with transportation.

### 4.7 Support and ownership verification.

4.7.1 Packaging. A random sample of packaging and packing shall be selected from ammunition to be delivered and visually inspected for packaging defects and compliance to requirements of section 5 of this specification.

4.7.2 Marking. A random sample of ammunition shall be selected from ammunition to be delivered and visually inspected for marking defects. Marking that is not visible and or clear shall be considered a failure and constitute a single reliability failure.

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### 5. PACKAGING

5.1 Preservation, packaging, packing, unitization, and marking shall provide protection for multiple handling, redistribution, and shipment by any transportation mode and meet or exceed the following requirements.

5.1.1 Packaging containers for hazardous materials, ammunition and explosives shall meet or exceed the requirements found in part 6 of the "United Nations Recommendations on the Transport of Dangerous Goods Model Regulations" and in a manner acceptable to the competent authority of the nation of origin and in accordance with the regulations of all applicable carriers.

5.1.2 Cleanliness - items and packaging shall be free of dirt and other contaminants which would contribute to the deterioration of the item or which would require cleaning by the customer prior to use. Coatings and preservatives applied to the item for protection are not considered contaminants.

5.1.3 Preservation - items susceptible to corrosion or deterioration shall be provided protection against external environmental effects.

5.1.4 Cushioning - items requiring protection from physical and mechanical damage (e.g. fragile, sensitive, critical material) or which could cause physical damage to other items, shall be protected by wrapping, cushioning, pack compartmentalization, or other means to mitigate shock and vibration and prevent damage during handling and shipment.

#### 5.2. Unit Package

5.2.1 Unit package shall be so designed and constructed that it will contain the contents with no damage to the item(s), and with minimal damage to the unit pack during shipment and storage in the shipping container, and will allow subsequent handling. The outermost component of the unit package shall be a container such as a sealed bag, carton, or box.

#### 5.3. Packing

5.3.1 Unit packages must be packed in shipping containers. All shipping containers shall be the most cost effective and shall be of the minimum cube to contain and protect the items.

5.3.2 Shipping Containers - the shipping container (including any necessary blocking, bracing, cushioning, or waterproofing) shall comply with the regulations of the carrier used and shall provide safe delivery to the destination at the lowest tariff cost. The shipping container shall be capable of multiple handling, stacking at least ten (10) feet high, and storage under favorable conditions and meet the requirements of the "United Nations Recommendations on the Transport of Dangerous Goods".

#### 5.4. Unitization

5.4.1 Shipments of identical items going to the same destination shall be palletized if they have a total cubic displacement of 20 cubic feet or more unless skids or other forklift handling

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features are included on the containers. Pallet loads must be stable, and to the greatest extent possible, provide a level top for ease of stacking. The weight capacity of the pallet must be adequate for the load. A pallet load shall not exceed 4,000 pounds and should not exceed 52 inches in length or width, or 54 inches in height. The load shall be contained in a manner that will permit safe handling during shipment and storage.

5.4.2 Banding - metal banding shall be used to secure load. Straps shall be applied to each column or layer of boxes. Tie down straps shall be applied to each column of boxes at 90 degrees to the load straps. Edge protectors shall be used when securing fiberboard boxes.

### 5.5. Marking

5.5.1 Packaging marking shall be visible, clear, and remain legible during normal life cycle handling.

5.5.2 All unit packages, intermediate packs, exterior shipping containers, and, as applicable, unitized loads shall be marked with item description, quantity, lot number, or serial number. The outer shipping container and unitized shall indicate load weight, UN dangerous goods proper shipping name, and UN number.

5.5.3 Each package shipping container shall show the United Nations packaging symbol and applicable codes in accordance with the construction requirements and testing of packaging as expressed in part 6 of the "United Nations Recommendations on the Transport of Dangerous Goods".

### 5.6. Additional Requirements for Hazardous Materials

5.6.1 The shipment shall be prepared in accordance with the "United Nations Recommendations on the Transport of Dangerous Goods" and other applicable regulations effective at the time of shipment in a manner acceptable to the competent authority of the nation of origin and in accordance with the regulations of all applicable carriers.

5.6.2 Packaging and marking for hazardous material shall comply with the requirements for the mode of transport and the applicable performance packaging contained in the following documents:

a. International air transport: International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air.

b. International vessel transport: International Maritime Organization (IMO) International Maritime Dangerous Goods Code (IMDG).



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### 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

#### 6.1 Acquisition requirements. Acquisition documents must specify the following:

- a. Title and date of this specification.
- b. Requirements for certificates of conformance for each lot or shipment of product.
- c. Requirements for age of ammunition.
- d. Requirements and provisions for submission of data as required.
- e. Requirements for acceptance criteria if different than those stated in specification.
- f. Requirements for reduction or elimination of verification procedures.
- g. Requirements and provisions for contractor and Government verification.
- h. Requirements and provisions for packaging of ammunition.
- i. Requirements and provisions for transportation of ammunition.

6.2 Reduction or elimination of verification procedures. The contract or purchase order will state the minimum requirements for reduction or elimination of verification procedures. Ammunition produced within five (5) years of delivery with evidence of continuous controlled storage, evidence of conformance to and in accordance with applicable technical data that satisfy requirements of production verification of Table II of this specification may be reason to reduce or eliminate verification procedures of Table II of this specification.

#### 6.3 Definitions.

6.3.1 Non Standard Ammunition. Non standard munitions are those munitions that have not been safety tested and type classified for Army use, are munitions and explosives that are not managed by National Inventory Control Points, do not have a national stock number (NSN) and cannot be procured or requisitioned through the Army supply system.

6.3.2 Technical Data. Technical data is the product specific technical drawing and Quality Assurance (QA) requirements to which ammunition and associated packaging is produced and accepted for each applicable Contract Line Item Number (CLIN). For the purpose of this specification Technical Data, as a minimum, must contain the following: top assembly, fuze and key component drawings with revision number, revision date, document control signature, key interface dimensions, and a list of component assemblies with drawing numbers and revision dates; packaging and marking drawings with revision number, revision date, document control signature and markings; and product specification with final assembly, fuze and key component in-process acceptance test methods with sample size, and accept/reject criteria.

6.3.3 Degradation. Ammunition with gross nonconformance to identified technical requirements, corrosion, cracks, deformation, and spillage.

6.3.4 Deterioration. Packaging ripped, broken, perforated, with water damage, and/or crushed.

Preparing activity:  
Army-AR

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## ANNEX A, WEAPON INTERFACE

TABLE III. Medium Caliber

<b>Item</b>	<b>Weapon Interface</b>	<b>Sample Size<sup>1</sup></b>
14.5 x 114mm Ball	KPV Machine Gun	95/80 (e.g. 32-0-1)
14.5 x 114mm Tracer	KPV Machine Gun	95/80 (e.g. 32-0-1)
23 x 115mm (All Types)	GSh-23 Gun	95/80 (e.g. 32-0-1)
23 x 152mm (All Types)	ZU-23 Gun	95/80 (e.g. 32-0-1)
30 x 165mm HEI	Gsh-30 Gun	95/80 (e.g. 32-0-1)
30 x 165mm HE-T	Gsh-30 Gun	95/80 (e.g. 32-0-1)
30 x 165mm APT	BMP-2 (2A42 Gun)	95/80 (e.g. 32-0-1)
30 x 165mm HEI	BMP-2 (2A42 Gun)	95/80 (e.g. 32-0-1)
30 x 165mm HE-T	BMP-2 (2A42 Gun)	95/80 (e.g. 32-0-1)

Notes:

1. Acceptance based on demonstration of reliability / confidence (example sampling plan provided in parenthesis sample size – accept – reject)

### Supplemental Requirements & Verifications

3.1 Requirements. Not Applicable

4.1 Verifications. Not Applicable

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TABLE IV. Artillery Ammunition

Item	Weapon Interface	Sample Size <sup>1</sup>
122mm HE Frag Full Charge	D-30 2A18M Towed Howitzer	90/60 (e.g. 8-0-1)
122mm HE Frag Partial Charge	D-30 2A18M Towed Howitzer	90/60 (e.g. 8-0-1)
122mm HEAT	D-30 2A18M Towed Howitzer	90/60 (e.g. 8-0-1)
122mm WP Smoke	D-30 2A18M Towed Howitzer	90/60 (e.g. 8-0-1)
122mm Illum	D-30 2A18M Towed Howitzer	90/60 (e.g. 8-0-1)
152mm Frag-HE	D-20 Towed Howitzer	90/60 (e.g. 8-0-1)
122mm Artillery Rockets	BM-21 Grad Multiple Rocket System (MRS)	90/60 (e.g. 8-0-1)

Notes:

1. Acceptance based on demonstration of reliability / confidence (example sampling plan provided in parenthesis sample size – accept – reject)

Supplemental Requirements & Verifications

3.1 Requirements. Not Applicable

4.1 Verifications. Not Applicable

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TABLE V. Aircraft Ammunition

Item	Weapon Interface	Sample Size <sup>1</sup>
57mm S-5KO Aviation Rocket	UB-16-57UM /UB-32 Rocket Pod	90/80 (e.g. 15-0-1)
57mm S-5KO Practice Aviation Rocket	UB-16-57UM /UB-32 Rocket Pod	90/80 (e.g. 15-0-1)
57mm S-5KP Aviation Rocket	UB-16-57UM /UB-32 Rocket Pod	90/80 (e.g. 15-0-1)
80mm S-8 Aviation Rocket	B-8M1/B8V20 Rocket Pad	90/80 (e.g. 15-0-1)
PP3	N/A	90/80 (e.g. 15-0-1)
PP9	N/A	90/80 (e.g. 15-0-1)
PPL	YaKB	90/80 (e.g. 15-0-1)
EKSR-46 Flare	Mi-17/35	90/80 (e.g. 15-0-1)

Notes:

1. Acceptance based on demonstration of reliability / confidence (example sampling plan provided in parenthesis sample size – accept – reject)

Supplemental Requirements & Verifications

3.1 Requirements. Not Applicable

4.1 Verifications. Not Applicable

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TABLE VI. Tank, Gun and ATGM

Item	Weapon Interface	Sample Size <sup>1</sup>
100mm HE	T-55 Tank	90/60 (e.g. 8-0-1)
115mm APFDS-T	T-62 Tank	90/60 (e.g 8-0-1)
115mm HE	T-62 Tank	90/60 (e.g 8-0-1)
115mm HEAT	T-62 Tank	90/60 (e.g 8-0-1)
125mm HE-Frag	T-64/T-72 Tank	90/60 (e.g 8-0-1)
125mm APFSDS	T-64/T-72 Tank	90/60 (e.g 8-0-1)
125mm HEAT	T-64/T-72 Tank	90/60 (e.g 8-0-1)
73mm HE	BMP-1 Fighting Vehicle	90/60 (e.g 8-0-1)
73mm HEAT	BMP-1 Fighting Vehicle	90/60 (e.g 8-0-1)
73mm HE	SPG-9 Recoilless Gun	90/60 (e.g 8-0-1)
73mm HEAT	SPG-9 Recoilless Gun	90/60 (e.g 8-0-1)
AT-3 ATGM HE, (Sagger)	BMP-1, Portable Launcher, BRDM Vehicle	90/60 (e.g 8-0-1)
AT-5 ATGM HE (Spandrel)	BMP-2/BRDM-2 Armored Vehicle	90/60 (e.g 8-0-1)

Notes:

1. Acceptance based on demonstration of reliability / confidence (example sampling plan provided in parenthesis sample size – accept – reject)

Supplemental Requirements & Verifications

3.1 Requirements. Not Applicable

4.1 Verifications. Not Applicable

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TABLE VII. Hand Grenades

Item	Weapon Interface	Sample Size <sup>1</sup>
RKG-3	N/A	90/80 (e.g. 15-0-1)
Grenade, Smoke	N/A	90/80 (e.g. 15-0-1)
Grenade, Riot Control	N/A	90/80 (e.g. 15-0-1)
Grenade, Fragmentation	N/A	90/80 (e.g. 15-0-1)

Notes:

1. Acceptance based on demonstration of reliability / confidence (example sampling plan provided in parenthesis sample size – accept – reject)

Supplemental Requirements & Verifications

3.1 Requirements. Not Applicable

4.1 Verifications. Not Applicable